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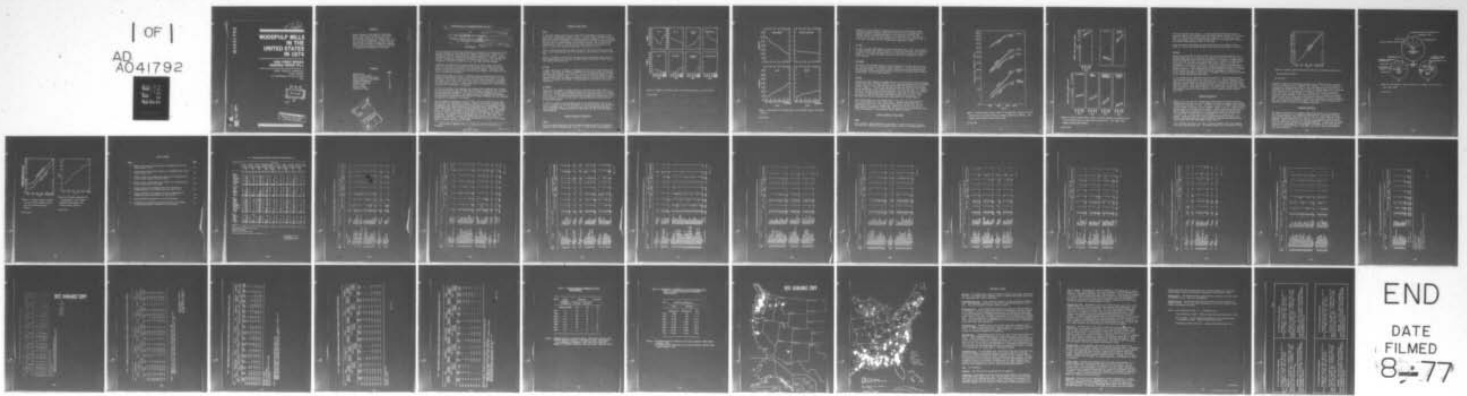
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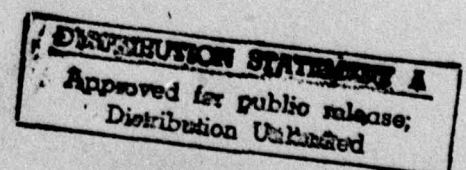
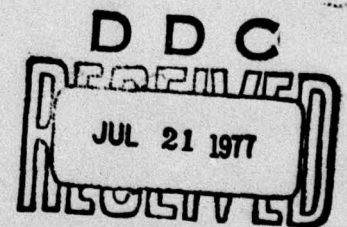
# WOODPULP MILLS IN THE UNITED STATES IN 1974

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USDA FOREST SERVICE  
RESOURCE REPORT FPL-1 ✓

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FOREST PRODUCTS LABORATORY ✓  
FOREST SERVICE  
U.S. DEPARTMENT OF AGRICULTURE  
1977



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### Abstract

Report focuses on the capacity of woodpulp mills in the United States to produce pulp. The location, type, and capacity of each mill in 1974 is enumerated. Trends since 1920 are reported on number and capacity of mills, types of pulp produced, and regional distribution of mills, as well as levels of production of woodpulp and consumption of pulpwood.

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6 WOODPULP MILLS IN THE UNITED STATES IN 1974 .

By

10 DAVID B. McKEEVER, Research Forester

① Forest Products Laboratory, <sup>1</sup> Forest Service resource rept.,  
U.S. Department of Agriculture

③ Madison, Wis.

Introduction

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Over the past half century the production of woodpulp in the United States has expanded rapidly and the industry has changed in many ways. Production of woodpulp in 1920 was 3.8 million tons, being produced by 323 mills. By 1974, 48.4 million tons of woodpulp were produced by 349 mills. Mills in 1920 were capable of producing an average of 47 tons of pulp per day. By 1974 the average daily capacity reached 426 tons, nine times the 1920 average.

A regional redistribution of pulping capacity has been taking place since 1920. At that time, the Northeast had 61 percent of all mills, which were capable of producing 64 percent of the Nation's woodpulp. Today the South, with 41 percent of the mills (more than any other region), can produce 62 percent of the Nation's woodpulp.

Significant changes in the use of different pulping processes have occurred. Sulfate pulping (kraft), which in 1920 accounted for only 5 percent of total production, now accounts for 68 percent of all woodpulp produced. Its growth has largely been in the South and at the expense of the sulfite, groundwood, and soda pulping processes. These changes have influenced the relative use of hardwoods and softwoods as raw material.

In 1974, 31 percent of all woodpulp was produced from roundwood mill residues. This differs markedly from 1920 when wood residues accounted for only 4 percent of total pulpwood consumption. The growth in residue consumption was most rapid between 1920 and 1965. Most major sources of roundwood mill residues are now being utilized and little increase in their proportion of total pulpwood consumption is expected in the future.

The environmental movement of the late 1960's and early 1970's has not been without impact on the woodpulp industry. Many of the marginal producers and the smaller, less efficient mills are being forced out of the market by mills incorporating the latest production and pollution control technologies. This trend should affect the types of woodpulp produced in the future. Groundwood mills, for example, are expected to increase in importance in the future due to the low level of pollutants produced and to the efficiency in pulpwood conversion. To produce a ton of groundwood pulp in 1974, less than 1 cord of pulpwood was required. Sulfite pulp production required over 2 cords of pulpwood per ton in 1974. Sulfite pulp is expected to lose much of its importance as a major pulp type in the future.

<sup>1</sup> Maintained at Madison, Wis., in cooperation with the University of Wisconsin.



## Number of Pulp Mills

### Total

In 1974, 349 woodpulp mills in the United States included 15 idle mills and 4 mills under construction (tables 1 and 2). In this study, a woodpulp mill is defined as a manufacturing facility used to produce a specific type of woodpulp, such as sulfate or groundwood. A woodpulp plant is defined as a manufacturing facility used to produce woodpulp at a single location. Two or more mills operating as a unit at a single location would therefore be considered one plant. As such, 292 separate plants were in operation in 1974.

Table 2 and the production map near the back of the report show the woodpulp mills in the United States in 1974 by location, type of mill, and daily capacity.

Based on Lockwood's Directory of the Paper and Allied Trades, there were 11 more woodpulp mills in 1974 than in 1960; however, there were 9 fewer mills in 1974 than in 1970 (table 3).

### By Type

Divergent trends in the number of woodpulp mills by type of pulp produced are evident. The number of sulfite, groundwood, and soda pulp mills has steadily declined since 1920 while the number of sulfate and defibrated/exploded mills has increased steadily (fig. 1). Over the past 14 years the number of semi-chemical pulp mills has remained relatively constant varying by only 2 from an average of 46 mills; the number of chemimechanical pulp mills has increased from 3 to 8.

### By Region

Regionally, the number of woodpulp mills in the South has grown from 24 in 1920 to 144 in 1974; in the West the growth was from 16 in 1920 to 73 in 1974 (table 4). In the Northeast woodpulp mills have decreased from 197 in 1920 to 62 in 1974. In the North Central States mill numbers have varied from a high of 86 in 1920 to a low of 60 in 1950. Currently there are 70 mills in the North Central region.

In 1974, 41 percent of all woodpulp mills in the United States were in the South, 12 percent in the West, 20 percent in the North Central, and 18 percent in the Northeast (fig. 2). Since 1920, the South and West have increased their proportion of pulp mills while the Northeast and North Central regions have decreased.

## Daily Capacity of Pulp Mills

### Total

The total daily capacity of the 349 woodpulp producing mills in the United States in 1974 was 149,000 tons (table 1). In this study, daily capacity is

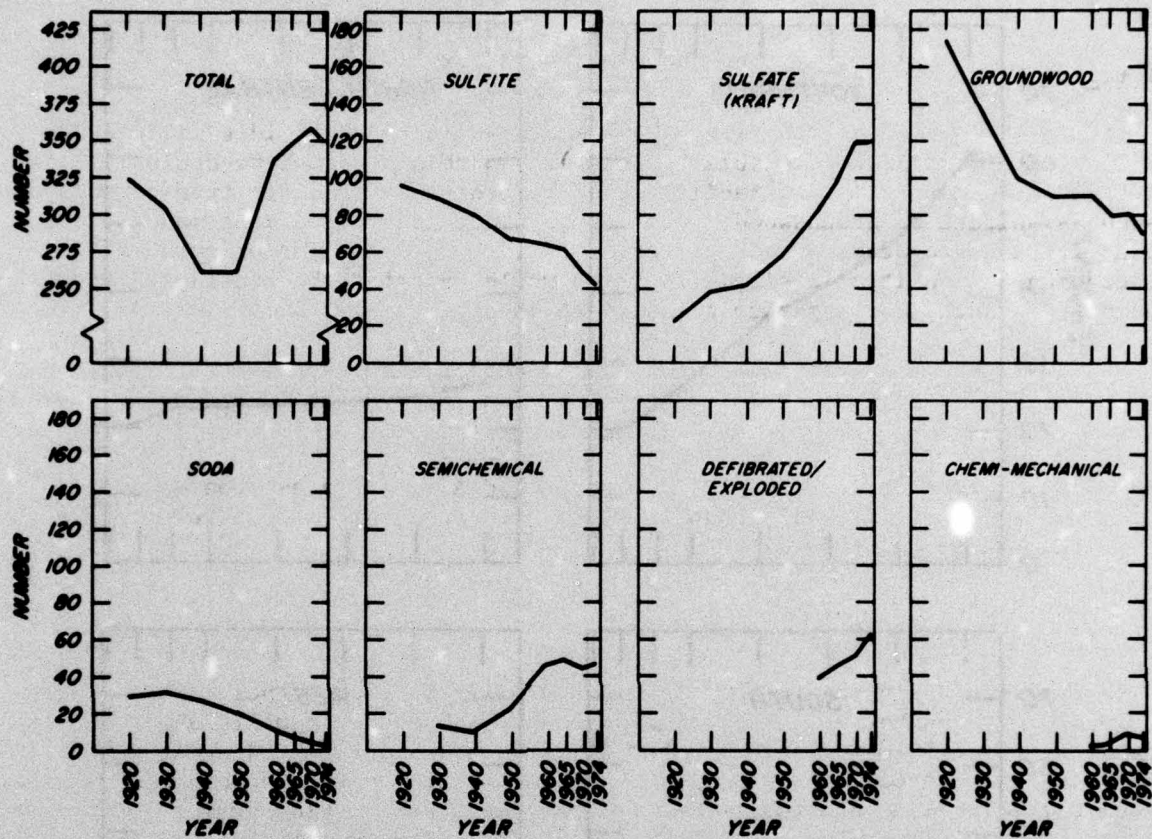


Figure 1.--Number of woodpulp mills in the United States, by type, 1920-74

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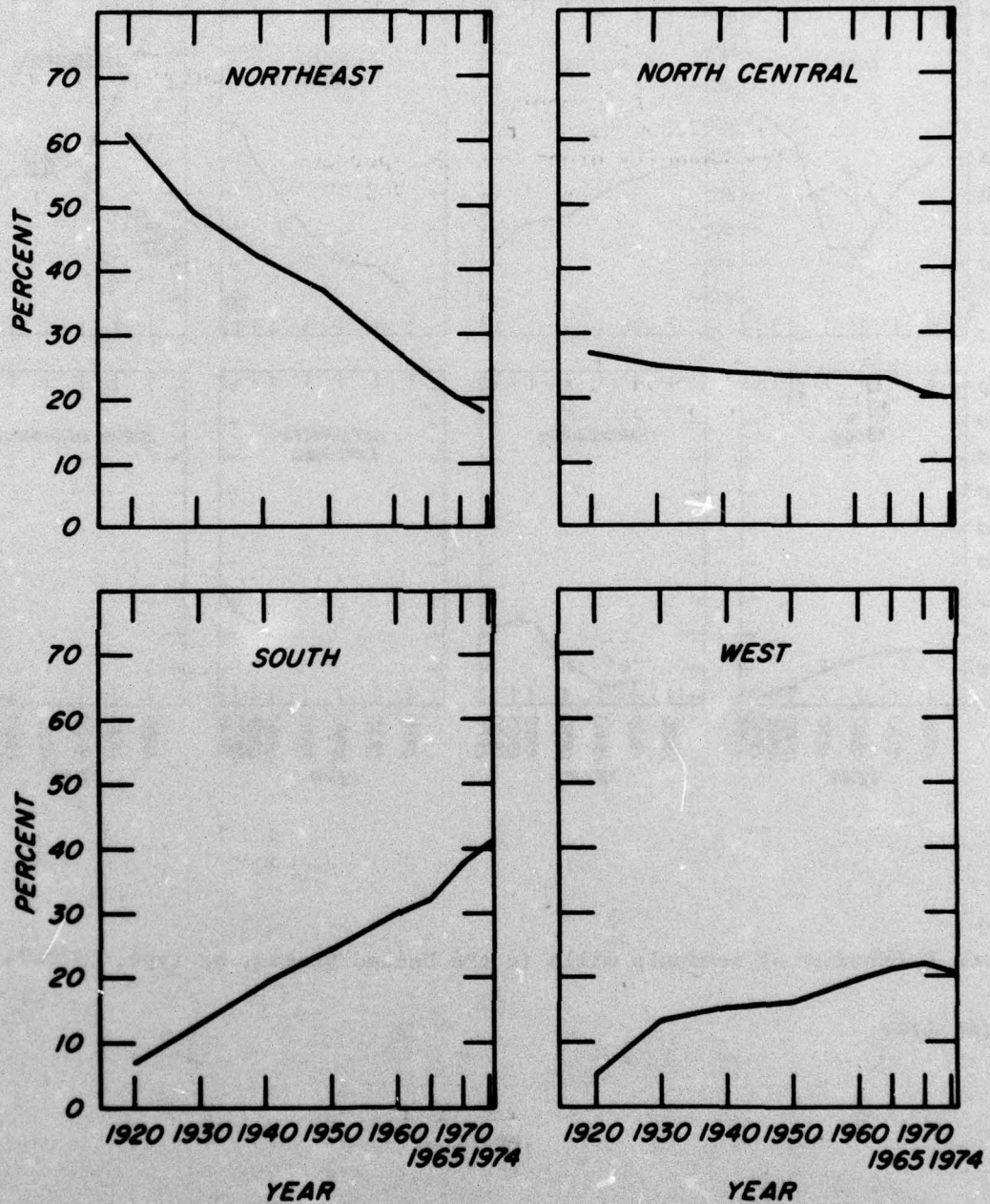


Figure 2.--Percentage of woodpulp mills in the United States, by region, 1920-74.

(M 144 577)

defined to be the amount of woodpulp that could be produced under normal conditions during a 24-hour time period with full use of equipment and an adequate supply of pulpwood and labor. Daily capacity increased from 137,000 tons in 1970 and from 83,000 tons in 1960 (table 3). The rate of growth in total daily capacity dropped to 2.1 percent for the period 1970 to 1974 from 5.2 percent for the 10-year period beginning in 1960.

#### By Type

In 1974, the 120 sulfate mills in the United States had a total daily capacity of nearly 99,000 tons, some 67 percent of total daily capacity. As recently as 1960, sulfate mills accounted for just 55 percent of total daily capacity (table 3). No other pulp type accounts for more than 10 percent of total daily capacity.

#### By Region

The South, the principal pulping region, accounted for 92,723 tons or 63 percent of total daily mill capacity in 1974 (table 4). Of this, 80 percent was the sulfate process. Total daily capacity in the West was 18 percent while the Northeast and North Central regions accounted for 10 percent and 9 percent respectively, of total daily capacity.

#### Average

Although the total number of woodpulp mills in the United States has fluctuated widely since 1920, the daily capacity of the average woodpulp mill has increased steadily from 47 tons in 1920 to 244 tons in 1960, reaching 426 tons per day in 1974 (table 4). Between 1960 and 1970 average mill capacity in the United States was growing at an average annual rate of 4.6 percent (fig. 3). Regional growth during this period was quite dramatic, being not less than 3.2 percent per year. Decreased growth was experienced in the 1970's as many mills, particularly those in the South, approached optimum operating size. The Northeast was the only region where a high growth rate was maintained.

The pulping capacity of the average mill in the South, 644 tons per day in 1974, far exceeds that of any other region. The West was second with an average mill size of 377 tons per day, the Northeast third at 249, and the North Central last with an average mill capacity of only 187 tons per day. These regional differences reflect when the capacities were installed and also different economies of scale between major pulping processes.

### Annual Capacity of Pulp Mills

#### Total

Daily capacity, when multiplied by the number of scheduled days of operation for each mill, resulted in an estimated annual capacity for woodpulp mills in



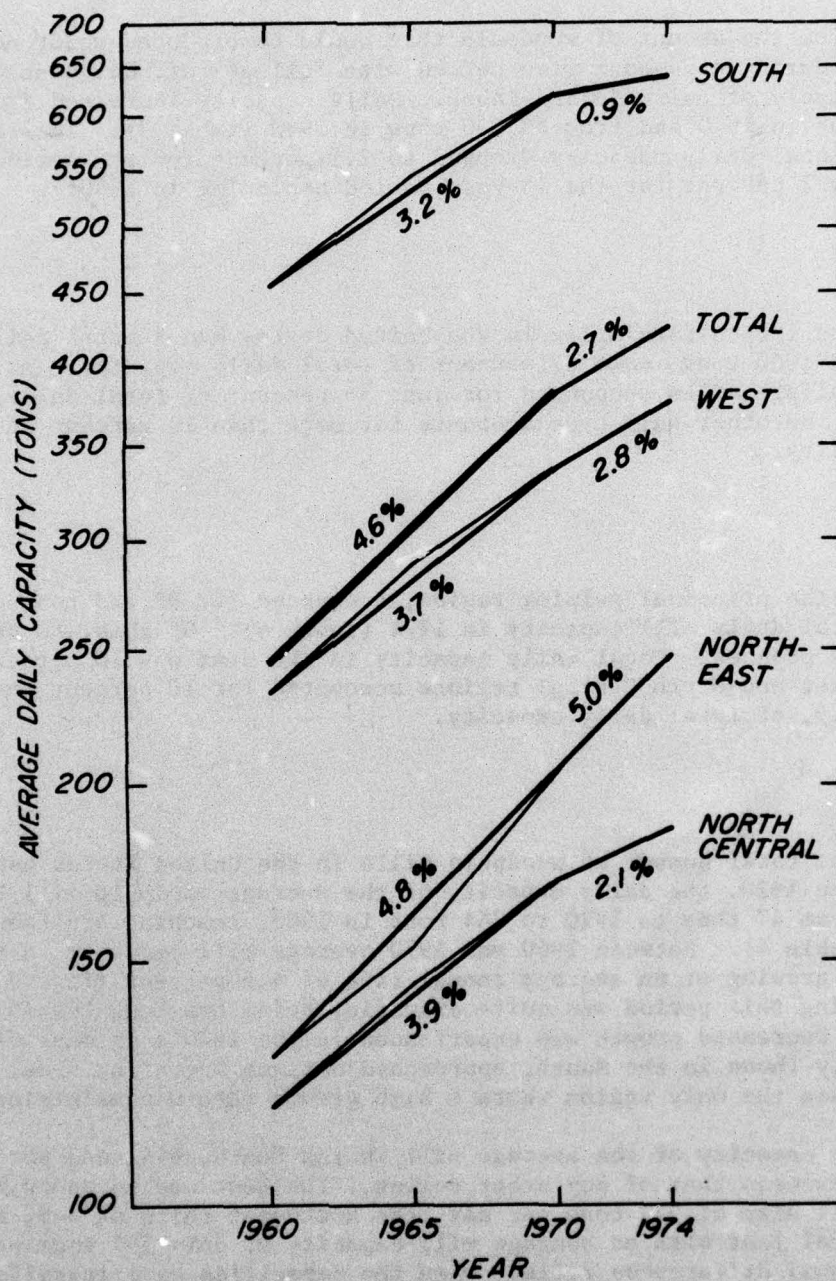


Figure 3.--Growth trends (heavy lines) in average daily capacity of wood-pulp mills in the United States by region, 1960-70 and 1970-74. The lighter lines indicate actual data points.

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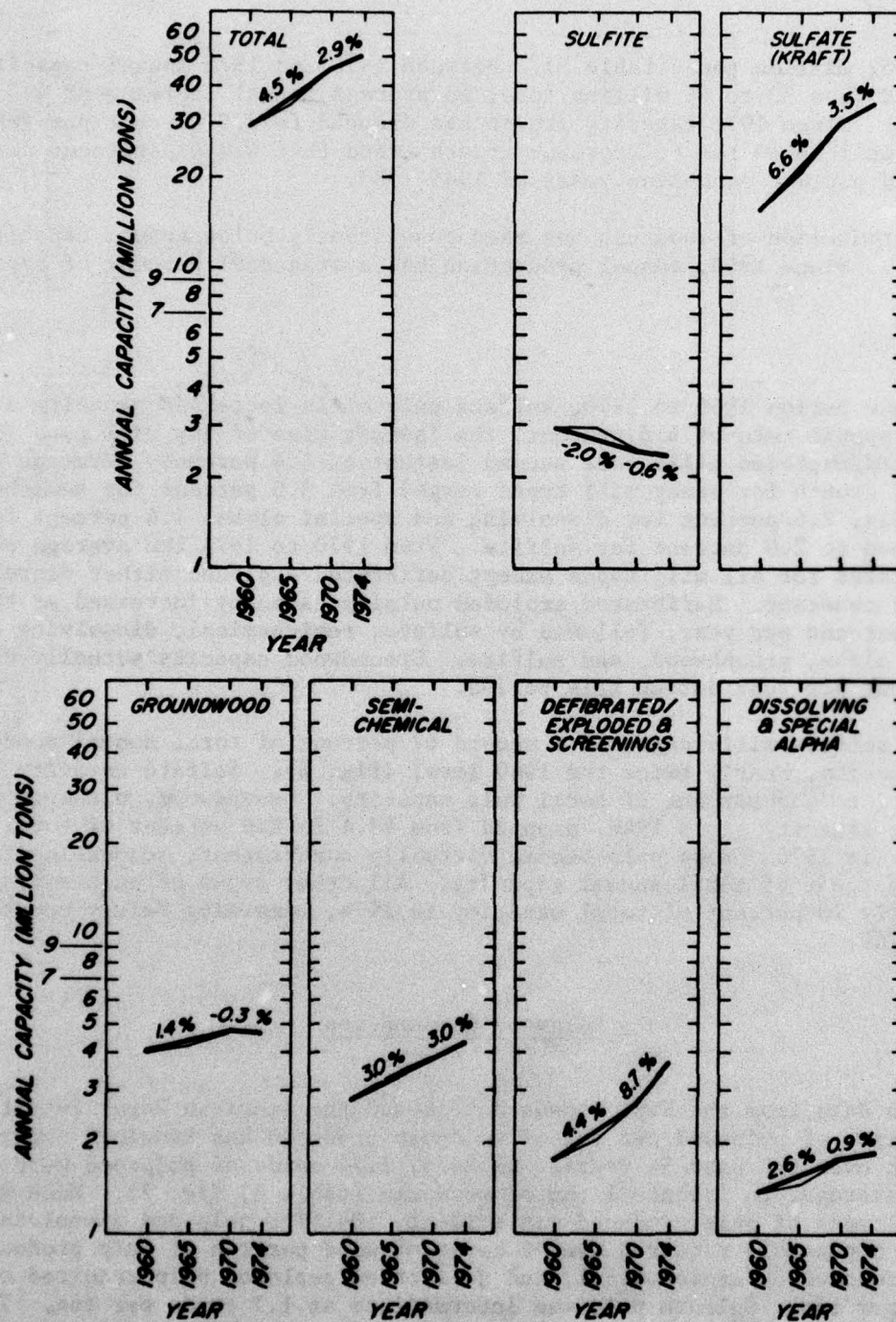


Figure 4.--Growth trends (heavy lines) in annual capacity of woodpulp mills in the United States, by type, 1960-70 and 1970-74. The light lines indicate actual data points.



1974 of 52 million tons (table 5). Between 1960 and 1970 annual capacity increased from 30 to 46 million tons, an average annual increase of 4.5 percent (fig. 4). Since 1970 capacity growth has dropped to 2.9 percent per year. This is well below the 6.2 percent growth trend that was experienced during the rapid postwar expansion years of 1945-1960.

Annual production of woodpulp has been consistently below annual capacity (fig. 5). Since 1960, annual production has averaged 91 percent of capacity.

#### By Type

During the period 1960 to 1970, sulfate pulp mills increased capacity at an average annual rate of 6.6 percent, the fastest rise of any mill type (fig. 4.). Defibrated/exploded mills rose second fastest at 4.4 percent. Average annual rates of growth for other mill types ranged from 3.0 percent for semichemical pulp mills, 2.6 percent for dissolving and special alpha, 1.4 percent for groundwood to 2.0 percent for sulfite. From 1970 to 1974 the average annual growth rates for all mill types except defibrated/exploded either decreased or remained constant. Defibrated/exploded pulping capacity increased at the rate of 8.7 percent per year, followed by sulfate, semichemical, dissolving and special alpha, groundwood, and sulfite. Groundwood capacity actually decreased by 51 tons per year during this period.

In 1974 sulfate mills captured a record 67 percent of total annual woodpulp mill capacity, nearly twice the 1940 level (fig. 6). Sulfite capacity dropped from 27.7 to 4.6 percent of total pulp capacity. Groundwood, although nearly doubling capacity since 1940, dropped from 23.4 to 8.9 percent of total annual capacity in 1974. Soda pulp became virtually nonexistent, accounting for less than 1 percent of total annual capacity. All other types of pulp mills accounted for nearly 20 percent of total capacity in 1974, remaining fairly constant since 1960.

#### Pulpwood Consumption

Based on data from the U.S. Census Bureau and the American Paper Institute, consumption of pulpwood per ton of woodpulp produced has remained surprisingly constant over the past 54 years. In 1974, 1.54 cords of pulpwood were required, on the average, to produce 1 ton of woodpulp (table 6, fig. 7). Much variation between types of pulp produced was evident. Sulfite pulp and dissolving and special alpha pulp required over 2 cords of wood per ton of pulp produced, while groundwood, semichemical, and defibrated/exploded pulp required only 1 cord per ton. Sulfate pulp was intermediate at 1.7 cords per ton. In general, those pulp types with lower consumption/production ratios, i.e., sulfate, defibrated/exploded, and semichemical have been experiencing more rapid growth than those with higher ratios (fig. 5).

Total pulpwood consumption has been increasing steadily since 1920, keeping pace with woodpulp production. The average annual rate of increase for both

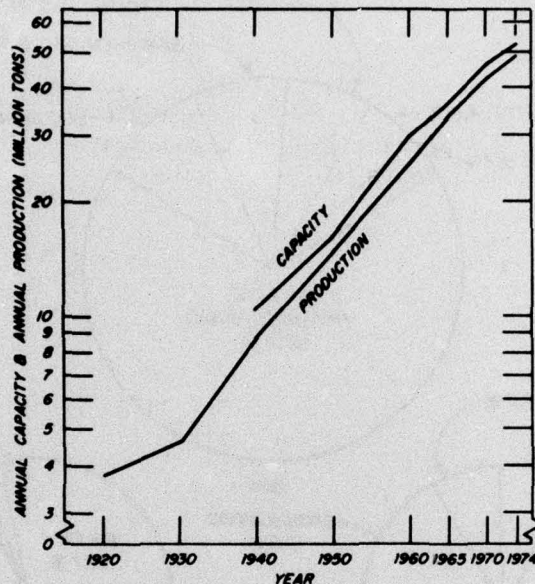


Figure 5.--Annual capacity and annual production of woodpulp mills in the United States, 1920-74

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pulpwood consumption and woodpulp production since 1920 was about 4 percent. In 1974, 75 million cords of pulpwood were consumed. Of this, 69 percent was conventional roundwood pulp (table 7), with the remaining 31 percent being roundwood mill residues. From 1920 to 1965 the average annual rate of increase in the proportion of residues used in woodpulp production was 4.2 percent. Since 1965, this rate has dropped to 2.4 percent due to scarce additional sources of usable residues. The increase in the use of residues in woodpulp production has led to a decline in the relative importance of softwood roundwood. In 1974 softwood roundwood accounted for 51 percent of total consumption, well below a high of 88 percent in 1940. Since 1960, hardwood roundwood has remained around 17 percent of the pulpwood production.

#### Pulpwood Production

The domestic production of pulpwood in the United States, as a percentage of the total production of all roundwood timber products (excluding firewood), has increased steadily since 1920 (table 8, fig. 8). From 5 percent in 1920, pulpwood currently accounts for 37 percent of all roundwood timber products produced. Nearly half of all the wood fiber processed in the United States in 1974, including mill residues, went through pulpmills. Between 1920 and 1960, pulpwood as a percentage of total production increased at an average annual rate of 4.5 percent per year. Since 1960, the rate of growth has dropped to 1.8 percent per year.



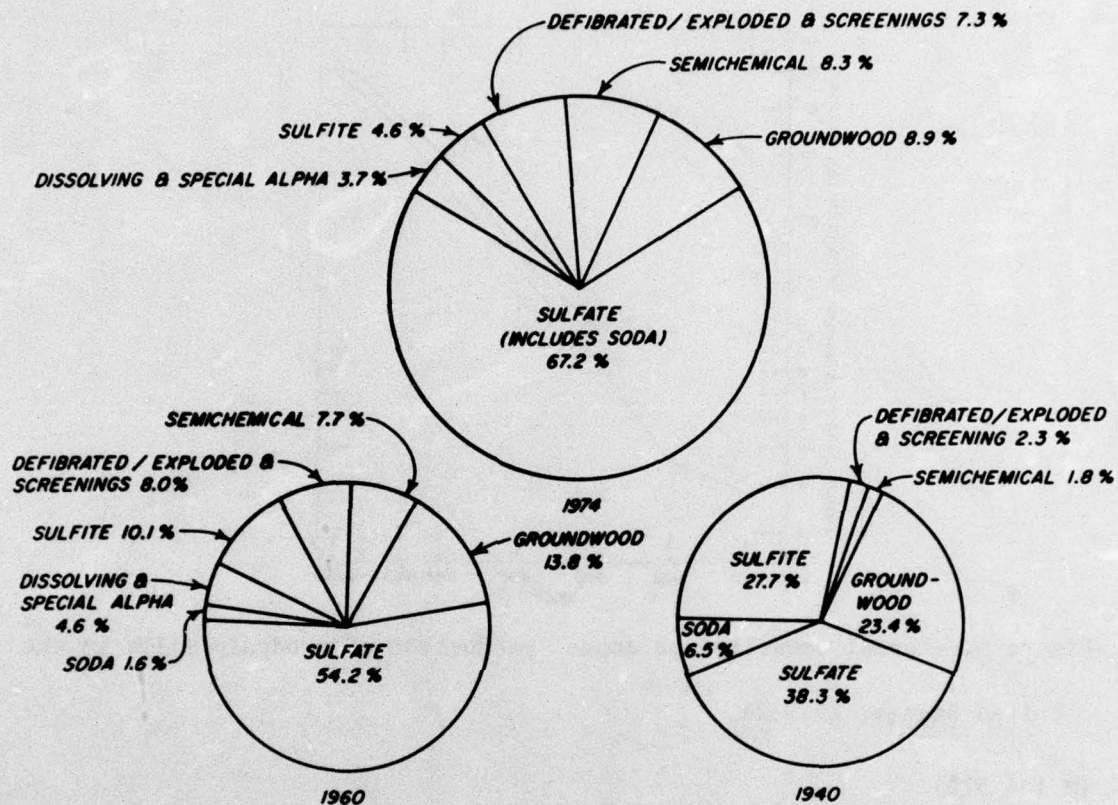


Figure 6.--Percentage of annual capacity of woodpulp mills, by type, 1974, 1960, 1940.

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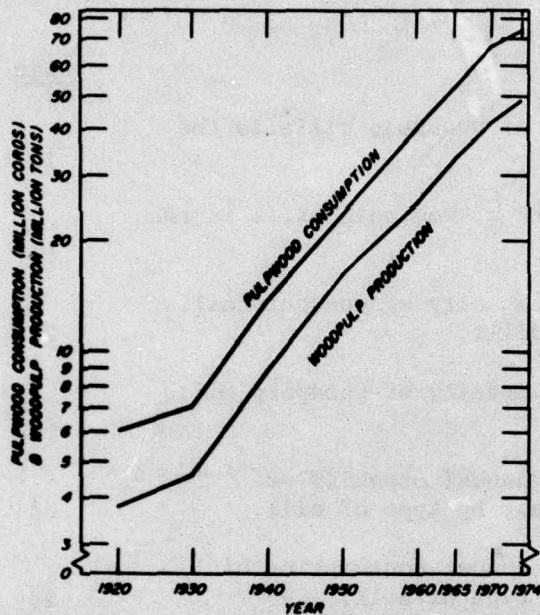


Figure 7.--Annual pulpwood consumption and annual pulpwood production in the United States, 1920-74.

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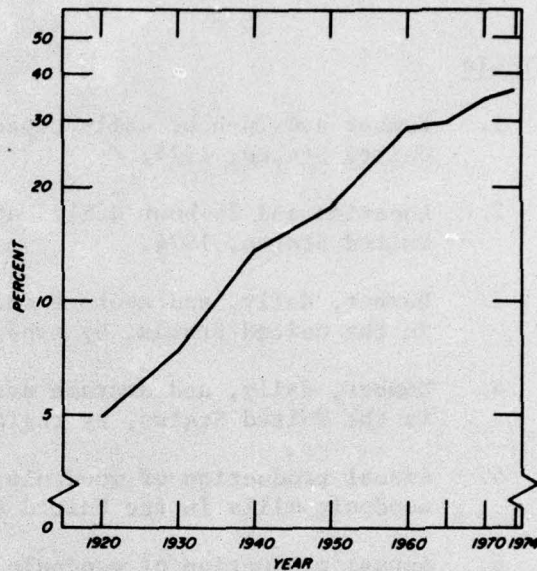


Figure 8.--Pulpwood production as a percentage of total timber products production in the United States, 1920-74

(M 144 575)



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Table 1.—Number and 24-hour daily capacity<sup>1</sup> of woodpulp mills in the United States, 1974

Region - State	Type of mill																		Total plants
	Total	Sulfite	Sulfate	Groundwood	Chemical	Soda	Semi-chemical	Defibrated	Exploded	Total									
	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily	Mills:Daily									
	ity	ity	ity	ity	ity	ity	ity	ity	ity	ity									
	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.
Northeast																			
Connecticut	1	35	0	0	0	0	0	0	0	0	0	0	0	1	35	0	0	0	1
Maine	25	7,913	5	1,630	6	2,910	14	3,373	0	0	0	0	0	0	0	0	0	0	18
Maryland	2	819	0	0	1	719	0	0	0	0	0	0	0	1	100	0	0	0	2
New Hampshire	5	1,480	2	230	1	700	0	0	0	0	0	2	550	0	0	0	0	0	3
New Jersey	4	317	0	0	0	0	0	0	0	0	0	0	0	3	317	0	0	0	4
New York	14	2,205	2	350	1	590	7	790	2	240	1	135	0	1	100	0	0	0	13
Pennsylvania	9	2,365	1	0	3	870	0	0	0	0	0	2	790	3	705	0	0	0	9
Rhode Island	1	250	0	0	0	0	0	0	0	0	0	0	0	1	250	0	0	0	1
Vermont	1	50	0	0	0	0	1	50	0	0	0	0	0	0	0	0	0	0	1
Total	62	15,434	10	2,210	12	3,709	22	4,913	2	240	1	135	4	1,340	10	1,507	1	0	52
North Central																			
Illinois	7	587	0	0	0	0	1	30	0	0	0	1	200	5	357	0	0	0	7
Indiana	2	370	0	0	0	0	0	0	0	0	0	2	370	0	0	0	0	0	2
Iowa	2	230	0	0	0	0	0	0	0	0	0	1	140	1	90	0	0	0	2
Michigan	10	2,512	0	0	2	840	3	268	0	0	0	3	845	2	565	0	0	0	9
Minnesota	12	2,638	1	120	2	730	5	1,118	1	50	0	1	300	2	330	0	0	0	9
Missouri	2	150	0	0	0	0	0	0	0	0	0	0	0	2	150	0	0	0	2
Ohio	6	1,620	0	0	1	600	0	0	0	0	0	2	750	3	270	0	0	0	6
Wisconsin	29	4,990	11	1,567	4	1,284	10	1,067	1	200	0	2	820	1	52	0	0	0	26
Total	70	13,097	12	1,687	9	3,444	19	3,477	2	250	0	0	12	3,425	16	1,814	0	0	63
South																			
Alabama	19	12,608	0	0	13	10,395	3	1,440	0	0	0	2	725	1	48	0	0	0	16
Arkansas	9	4,554	0	0	6	3,980	1	400	0	0	0	0	0	2	174	0	0	0	8
Florida	11	9,695	1	420	8	8,975	0	0	0	0	0	1	200	1	100	0	0	0	10
Georgia	17	14,870	0	0	11	13,880	1	300	1	250	0	2	640	2	100	0	0	0	15
Kentucky	3	1,200	0	0	2	900	0	0	0	0	0	1	300	0	0	0	0	0	3
Louisiana	19	11,275	0	0	11	9,425	2	570	0	0	0	4	1,160	2	120	0	0	0	14
Mississippi	8	6,000	0	0	4	4,525	1	165	0	0	0	0	0	2	300	1	1,000	7	7
North Carolina	10	6,285	0	0	5	5,320	0	0	0	0	0	2	520	3	445	0	0	0	9
Oklahoma	4	2,300	0	0	1	1,300	0	0	0	0	0	1	500	2	500	0	0	0	3
South Carolina	10	7,620	0	0	4	5,430	2	650	0	0	0	2	880	2	660	0	0	0	8
Tennessee	10	3,220	0	0	2	1,200	2	545	1	200	1	250	3	725	1	300	0	0	8
Texas	12	6,205	0	0	6	4,460	3	1,180	0	0	0	0	0	3	365	0	0	0	9
Virginia	12	6,891	0	0	4	4,524	1	225	0	0	0	5	1,812	2	330	0	0	0	10
Total	144	92,723	1	420	77	74,224	16	5,475	2	450	1	250	23	7,462	23	3,442	1	1,000	120
West																			
Alaska	2	1,240	2	1,240	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Arizona	2	820	0	0	1	600	1	220	0	0	0	0	0	0	0	0	0	0	1
California	11	3,215	0	0	4	2,190	0	0	1	75	0	1	450	3	175	2	325	10	10
Idaho	1	850	0	0	1	850	0	0	0	0	0	0	0	0	0	0	0	0	1
Montana	1	1,150	0	0	1	1,150	0	0	0	0	0	0	0	0	0	0	0	0	1
Oregon	26	8,640	5	870	7	4,995	6	1,490	0	0	0	3	625	5	660	0	0	0	21
Washington	30	11,593	11	4,062	8	5,700	6	876	1	80	0	3	815	1	60	0	0	0	21
Total	73	27,508	18	6,172	22	15,485	13	2,586	2	155	0	7	1,890	9	895	2	325	57	57
United States																			
Total	349	188,762	41	10,489	120	98,942	70	14,751	8	1,095	2	385	46	14,117	58	7,658	4	1,325	292

<sup>1</sup>Includes idle mills and mills under construction.

<sup>2</sup>Includes chemi-groundwood.

<sup>3</sup>Includes one mill with capacity unknown.

Source: Lockwood's Directory of the Paper and Allied Trades - 1974.

Forest Products Laboratory  
Forest Service  
U.S. Department of Agriculture  
Madison, Wisconsin 53705



Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours										Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Semi-chemical	Defibrated	Exploded
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Semi-chemical	Defibrated	Exploded										
Northeast																					
Connecticut:																					
1	Tilo Co., Inc.	Stratford	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0		
	Total	1 plant(s)	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	0		
Maine:																					
2	Eastern Pine Paper, Inc.	Brewer	200	2,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	Georgia-Pacific Corp.	Woodland	1,040	0	800	240	0	0	0	0	0	0	0	0	0	0	0	0	0		
4	Great Northern Paper Co.	Millinocket	1,350	500	0	850	0	0	0	0	0	0	0	0	0	0	0	0	0		
5	Great Northern Paper Co.	East Millinocket	920	0	0	920	0	0	0	0	0	0	0	0	0	0	0	0	0		
6	Hearst Corp.	Brunswick	200	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0		
7	International Paper Co.	Jay	775	0	600	175	0	0	0	0	0	0	0	0	0	0	0	0	0		
8	International Paper Co.	Livermore Falls	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0		
9	Kennebec River Pulp & Paper Co.	Madison	170	0	0	70	0	0	0	0	0	0	0	0	0	0	0	0	0		
Massachusetts:																					
10	Kayes Fibre Co.	Shawmut	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0		
11	Lincoln Pulp & Paper Co., Inc.	Lincoln	340	0	340	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12	Old Town Pulp Products, Inc.	Old Town	50	0	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0		
13	Orford Paper Co.	Rumford	670	0	550	120	0	0	0	0	0	0	0	0	0	0	0	0	0		
14	Pembecot Co.	Old Town	550	200	350	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15	Scott Paper Co.	Winslow	480	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
16	Stetler Tissue Corp.	Augusta	270	2,250	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		
17	St. Regis Paper Co.	Bucksport	328	0	0	328	0	0	0	0	0	0	0	0	0	0	0	0	0		
18	S. D. Warren Co.	Westbrook	270	0	270	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
19	United States Gypsum Co.	Lisbon Falls	100	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	16 plant(s)	7,913	1,630	2,910	3,373	0	0	0	0	0	0	0	0	0	0	0	0	0		
Maryland:																					
20	Comptex Industries, Inc.	Pinkberry	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
21	Westvaco Corp.	Lake	719	0	719	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	2 plant(s)	819	0	719	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
New Hampshire:																					
22	Brown Co.	Berlin	950	0	700	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
23	Groveton Papers Co.	Groveton	430	2,130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
24	Profile Paper Corp.	Lincoln	100	2,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	3 plant(s)	1,480	230	700	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

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Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours										Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Semi-chemical	Defibrated	Exploded
New Jersey:																					
25	Calcoen Corp.	Perth Amboy	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0		
26	Conmed Corp.	Riverside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,999		
27	GNF Corp.	Gloucester City	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192	0		
28	John-Manville Products Corp.	Manville	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	0		
	Total	4 plant(s)	317	0	0	0	0	0	0	0	0	0	0	0	0	0	0	317	0		
New York:																					
29	Cellu Products Inc.	Niagara Falls	100	0	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0		
30	Calcoen Corp.	Poughkeepsie	100	0	0	0	0	40	0	0	0	0	0	0	0	0	0	40	0		
31	Diamond International Corp.	Ogdensburg	50	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0		
32	Diamond International Corp.	Plattsburgh	50	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0		
33	Fisch, Frym & Co., Inc.	Glen Falls	250	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
34	Georgia-Pacific Corp.	Lyons Falls	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
35	Georgia-Pacific Corp.	Plattsburgh	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
36	Imperial Wallpaper Mill, Inc.	Plattsburgh	35	0	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0		
37	International Paper Co.	Cornith	255	0	0	0	0	255	0	0	0	0	0	0	0	0	0	0	0		
38	International Paper Co.	North Tonawanda	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
39	International Paper Co.	Ticonderoga	590	0	0	0	590	0	0	0	0	0	0	0	0	0	0	0	0		
40	Laken Fiber Industries Inc.	Beaver Falls	60	0	0	0	0	60	0	0	0	0	0	0	0	0	0	0	0		
41	St. Regis Paper Co.	Deferiet	340	2100	0	0	0	240	0	0	0	0	0	0	0	0	0	0	0		
	Total	13 plant(s)	2,205	350	590	0	790	240	0	0	0	0	0	0	0	0	0	100	0		
Pennsylvania:																					
42	Appleton Papers Inc.	Roaring Spring	180	0	0	0	180	0	0	0	0	0	0	0	0	0	0	0	0		
43	Calcoen Corp.	Philadelphia	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	160	0		
44	Calcoen Corp.	Summit	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
45	Curtain-Feed Products Corp.	York	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0		
46	Chamlin Paper Products Co.	Mechanicsville	0	5,999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
47	Hammill Paper Co.	Erie	640	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
48	Masonite Corp.	Towanda	500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
49	Pennatech Papers Inc.	Johnstown	190	0	0	0	190	0	0	0	0	0	0	0	0	0	0	0	0		
50	P. H. Glatfelter Co.	Spring Grove	500	0	0	0	500	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	9 plant(s)	2,365	0	870	0	0	0	0	0	0	0	0	0	0	0	0	705	0		
Rhode Island:																					
51	Bird & Son, Inc.	Phillipsdale	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Total	1 plant(s)	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Vermont:																					
52	Standard Packaging Corp.	Sheldon Spring	50	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0		
	Total	1 plant(s)	50	0	0	0	0	50	0	0	0	0	0	0	0	0	0	0	0		
	Total, Northeast	52 plant(s)	15,434	2,210	5,789	0	4,213	240	0	0	0	0	0	0	0	0	0	1,507	0		



Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours						Semi-defibrated	Employed	
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Chemical			
North Central												
Illinois:												
53	Alton Box Board Co.	Alton	200	0	0	0	0	0	200	0	0	
54	Bind & Son, Inc.	Chicago	42	0	0	0	0	0	0	42	0	
55	Calumet Corp.	Peoria	90	0	0	0	0	0	0	90	0	
56	Calumet Corp.	Wilkinson	30	0	0	30	0	0	0	0	0	
57	Certain-Teed Products Corp.	East St. Louis	85	0	0	0	0	0	0	85	0	
58	Flintstone Co.	Mount Carmel	40	0	0	0	0	0	0	40	0	
59	CAF Corp.	Joliet	100	0	0	0	0	0	0	100	0	
	Total	7 plant(s)	587	0	0	30	0	0	200	357	0	
Indiana:												
60	Continuum Corp. of America	Carthage	200	0	0	0	0	0	2,100	0	0	
61	Weyerhaeuser Paper & Mfg. Co.	Terre Haute	270	0	0	0	0	0	0	270	0	
	Total	2 plant(s)	370	0	0	0	0	0	0	370	0	
Iowa:												
62	Calumet Corp.	Dubuque	90	0	0	0	0	0	0	90	0	
63	Consolidated Packaging Corp.	Fort Madison	140	0	0	0	0	0	140	0	0	
	Total	2 plant(s)	230	0	0	0	0	0	140	90	0	
Michigan:												
64	Michibishi Corp.	Alpena	430	0	0	0	0	0	0	430	0	
65	Calumet Corp.	L'Anse	135	0	0	0	0	0	0	135	0	
66	Weyerhaeuser Paper Co.	Escanaba	750	0	600	150	0	0	0	0	0	
67	Weyerhaeuser Paper Co.	Onondaga	220	0	0	0	0	0	220	0	0	
68	Weyerhaeuser Paper & Paper Co.	Manistique	90	0	0	90	0	0	0	0	0	
69	Weyerhaeuser Corp.	Oscoda	225	0	0	0	0	0	225	0	0	
70	Packaging Corp. of America	Piller City	400	0	0	0	0	0	400	0	0	
71	Scott Paper Co.	Manistee	22	0	0	22	0	0	0	0	0	
72	S.D. Warren Co.	Marquette	240	0	240	0	0	0	0	0	0	
	Total	5 plant(s)	2,512	0	840	262	0	0	845	565	0	
Minnesota:												
73	Weyerhaeuser Paper Co.	Grand Rapids	218	0	0	168	50	0	0	0	0	
74	Boise Cascade Corp.	International Falls	770	0	320	450	0	0	0	0	0	
75	Consolidated	Cloquet	300	0	0	300	0	0	0	0	0	
76	Weyerhaeuser Paper Co.	Little Falls	75	0	0	75	0	0	0	0	0	
77	Weyerhaeuser Paper Co.	St. Paul	300	0	0	0	0	0	300	0	0	
78	Weyerhaeuser Paper Co.	Cloquet	520	120	400	0	0	0	0	0	0	
79	St. Regis Paper Co.	Marshall	125	0	0	125	0	0	0	0	0	
80	Superior Corp.	Ham Lake	90	0	0	0	0	0	0	90	0	
81	Superior Corp.	Duluth	240	0	0	0	0	0	0	240	0	
	Total	9 plant(s)	2,638	120	720	1,118	50	0	300	330	0	

Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours						Semi-defibrated:Employed
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Chemical	
Missouri:										
82	GAP Corp.	Kansas City	90	0	0	0	0	0	0	90
83	Hubert Fiberboard Inc.	Boonville	60	0	0	0	0	0	0	60
	Total	2 plant(s)	150	0	0	0	0	0	0	150
Ohio:										
84	Colotex Corp.	Cincinnati	100	0	0	0	0	0	0	100
85	Certain-Tied Products Corp.	Avery	110	0	0	0	0	0	0	110
86	Container Corp. of America	Circleville	300	0	0	0	0	0	300	0
87	Lopar-Long Co.	Franklin	60	0	0	0	0	0	0	60
88	Mead Corp.	Chillicothe	600	0	600	0	0	0	0	0
89	Stone Container Corp.	Coshocton	450	0	0	0	0	0	450	0
	Total	6 plant(s)	1,620	0	600	0	0	0	750	270
Wisconsin:										
90	American Can Co.	Green Bay	210	150	0	60	0	0	0	0
91	Appleton Papers Inc.	Combined Locks	200	0	0	0	200	0	0	0
92	Badger Paper Mills Inc.	Peshigo	110	110	0	0	0	0	0	0
93	Arcon Co.	Sau Claire	60	0	0	260	0	0	0	0
94	Champion Paper Products Co.	Green Bay	265	180	0	85	0	0	0	0
95	Consolidated Papers, Inc.	Appleton	175	175	0	0	0	0	0	0
96	Consolidated Papers, Inc.	Stevens Point	92	0	0	92	0	0	0	0
97	Consolidated Papers, Inc.	Wisconsin Rapids	625	0	400	225	0	0	0	0
98	Evans Products Co.	Phillips	52	0	0	0	0	0	0	52
99	Flambeau Paper Co.	Park Falls	115	115	0	0	0	0	0	0
100	Flintkote Co.	Cornell	50	0	0	50	0	0	0	0
101	Green Bay Packaging, Inc.	Green Bay	200	0	0	0	0	200	0	0
102	Kimberly-Clark Corp.	Kimberly	115	0	0	115	0	0	0	0
103	Meisner Paper Corp.	Neenah	174	0	174	0	0	0	0	0
104	Minocqua Edwards Paper Co., Inc.	Minocqua	310	0	310	0	0	0	0	0
105	Minocqua Edwards Paper Co., Inc.	Port Edwards	215	215	0	0	0	0	0	0
106	Minocqua of Wisconsin Paper Corp.	Niagara	150	0	0	150	0	0	0	0
107	Omni-Illinois Inc.	Tombauk	620	2	0	0	0	620	0	0
108	Scott Paper Co.	Marinette	50	50	0	0	0	0	0	0
109	Scott Paper Co.	Omro Falls	110	110	0	0	0	0	0	0
110	St. Regis Paper Co.	Minneapolis	120	120	0	0	0	0	0	0
111	Superior Fibers Products, Inc.	Superior	180	0	0	180	0	0	0	0
112	Thimney Pulp & Paper Co.	Kenosha	400	0	400	0	0	0	0	0
113	Tombauk Power & Pulp Co., Inc.	Tombauk	50	0	0	50	0	0	0	0
114	Wauson Paper Mills Co.	Brokaw	142	142	0	0	0	0	0	0
115	Weyerhaeuser Co.	Rothschild	200	200	0	0	0	0	0	0
	Total	26 plant(s)	4,990	1,567	1,284	1,067	200	0	820	52
	Total, North Central	63 plant(s)	13,097	1,687	3,444	2,477	250	0	3,425	1,814



Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant Name	Plant location	Total	Mill capacity in tons/24 hours						Semi-Defibrated	Explosive	
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda-chemical	Chemical			
South												
Alabama:												
116	Alabama Kraft Co.	Mohr	1,000	0	1,000	0	0	0	0	0	0	
117	Allied Paper Inc.	Jackson	500	0	500	0	0	0	0	0	0	
118	American Can Co.	Butler	930	0	930	0	0	0	0	0	0	
119	Champion International	Courtland	550	0	550	0	0	0	0	0	0	
120	Container Corp. of America	Brewton	900	0	900	0	0	0	0	0	0	
121	GAP Corp.	Mobile	48	0	0	0	0	0	0	48	0	
122	Gulf States Paper Corp.	Dumppolis	360	0	360	0	0	0	0	0	0	
123	Gulf States Paper Corp.	Tuscaloosa	500	0	500	0	0	0	0	0	0	
124	Hammermill Paper Co.	Selma	500	0	500	0	0	0	0	0	0	
125	International Paper Co.	Mobile	1,600	0	1,300	300	0	0	0	0	0	
126	Kimberly-Clark Corp.	Coosa Pines	1,525	0	585	940	0	0	0	0	0	
127	Macmillan Bloedel Inc.	Pine Hill	1,000	0	1,000	0	0	0	0	0	0	
128	Mead Corp.	Stevenson	575	0	0	0	0	0	3,575	0	0	
129	National Gypsum Co.	Mobile	350	0	0	200	0	0	150	0	0	
130	Scott Paper Co.	Mobile	1,400	0	1,400	0	0	0	0	0	0	
131	Union Camp Corp.	Montgomery	870	0	870	0	0	0	0	0	0	
	Total	16 plant(s)	12,608	0	10,395	1,440	0	0	725	48	0	
Arkansas:												
132	Arkansas Kraft Corp.	Morrilton	360	0	360	0	0	0	0	0	0	
133	Elk Roofing Co.	Stephens	24	0	0	0	0	0	0	24	0	
134	Georgia-Pacific Corp.	Crossett	1,050	0	1,050	0	0	0	0	0	0	
135	International Paper Co.	Candem	750	0	750	0	0	0	0	0	0	
136	International Paper Co.	Pine Bluff	1,620	0	1,220	400	0	0	0	0	0	
137	Minco Edwards Paper Co., Inc.	Arkdown	400	0	400	0	0	0	0	0	0	
138	Sugarwood Corp.	North Little Rock	150	0	0	0	0	0	0	150	0	
139	Weyerhaeuser Co.	Pine Bluff	200	0	200	0	0	0	0	0	0	
	Total	8 plant(s)	4,554	0	3,980	400	0	0	0	174	0	
Florida:												
140	Mitibi Corp.	Blountstown	100	0	0	0	0	0	0	100	0	
141	Alton Box Board Co.	Jacksonville	675	0	675	0	0	0	0	0	0	
142	Buckeye Cellulose Corp.	Poley	900	0	900	0	0	0	0	0	0	
143	Container Corp. of America	Fernandina Beach	1,700	0	1,500	0	0	0	200	0	0	
144	Madison Pulp & Paper Corp.	Pelata	950	0	950	0	0	0	0	0	0	
145	International Paper Co.	Panama City	1,400	0	1,400	0	0	0	0	0	0	
146	ITR Rayonier Inc.	Fernandina Beach	420	420	0	0	0	0	0	0	0	
147	St. Joe Paper Co.	Port St. Joe	1,300	0	1,300	0	0	0	0	0	0	
148	St. Regis Paper Co.	Cantonment	900	0	900	0	0	0	0	0	0	
149	St. Regis Paper Co.	Jacksonville	1,350	0	1,350	0	0	0	0	0	0	
	Total	10 plant(s)	9,695	420	8,975	0	0	0	200	100	0	

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Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours						Semi- defibrated	Exploded
				Sulfite	Sulfate	Ground- wood	Chemical	Soda	Chemical		
Georgia:											
150	Mitlith Southern Corp.	Augusta	300	0	0	300	0	0	0	0	0
151	Armstrong Cork Co.	Macon	250	0	0	0	4,250	0	0	0	0
152	Brunswick Pulp & Paper Co.	Brunswick	1,550	0	1,550	0	0	0	0	0	0
153	Certain-Feed Products Corp.	Savannah	40	0	0	0	0	0	0	40	0
154	Continental Can Co., Inc.	Augusta	800	0	800	0	0	0	0	0	0
155	Continental Can Co., Inc.	Port Wentworth	625	0	625	0	0	0	0	0	0
156	GAF Corp.	Savannah	60	0	0	0	0	0	0	60	0
157	Georgia Kraft Co.	Kennett	1,550	0	1,550	0	0	0	0	0	0
158	Georgia Kraft Co.	Macon	900	0	900	0	0	0	0	0	0
159	Gilman Paper Co.	St. Marys	1,100	0	1,100	0	0	0	0	0	0
160	Great Northern Paper Co.	Cedar Springs	2,120	0	1,780	0	0	340	0	0	0
161	Interstate Paper Corp.	Riceboro	525	0	525	0	0	0	0	0	0
162	ITF Meynier Inc.	Jesup	1,200	0	1,200	0	0	0	0	0	0
163	Ocean-Illinois Inc.	Valdosta	950	0	950	0	0	0	0	0	0
164	Union Camp Corp.	Savannah	2,900	0	2,600	0	0	300	0	0	0
	Total	15 plant(s)	14,870	0	13,580	300	250	0	640	100	0
Kentucky:											
165	Wesco Corp.	Hanesville	300	0	0	0	0	0	300	0	0
166	Western Kraft Corp.	Hanesville	300	0	300	0	0	0	0	0	0
167	Westvaco Corp.	Wickliffe	600	0	600	0	0	0	0	0	0
	Total	3 plant(s)	1,200	0	900	0	0	0	300	0	0
Louisiana:											
168	Bird & Son, Inc.	Shreveport	60	0	0	0	0	0	0	60	0
169	Bolise Southern Co.	Deridder	1,380	0	1,030	350	0	0	0	0	0
170	Calcraft Paper Co.	Elizabeth	300	0	300	0	0	0	0	0	0
171	Continental Can Co., Inc.	Hodge	1,650	0	1,400	0	0	0	250	0	0
172	Crown Zellerbach Corp.	Bogalusa	1,490	0	1,340	0	0	0	150	0	0
173	Crown Zellerbach Corp.	St. Francisville	500	0	500	0	0	0	0	0	0
174	Georgia-Pacific Corp.	Port Hudson	530	0	530	0	0	0	0	0	0
175	International Paper Co.	Bastrop	1,660	0	1,100	0	0	0	560	0	0
176	International Paper Co.	Springhill	1,000	0	1,000	0	0	0	0	0	0
177	Olinkraft Inc.	West Monroe	1,325	0	1,125	0	0	0	200	0	0
178	Pinelville Kraft Corp.	Pinelville	800	0	800	0	0	0	0	0	0
179	Southern Johns-Manville Prods.	New Orleans	60	0	0	0	0	0	0	0	0
180	St. Francisville Paper Co.	St. Francisville	220	0	0	220	0	0	0	60	0
181	Western Kraft Corp.	Campiti	300	0	300	0	0	0	0	0	0
	Total	14 plant(s)	11,275	0	9,425	570	0	0	1,160	120	0



Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours							Semi-chemical	Defibrated/Exploded
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda				
Mississippi:												
182	Flintkote Co.	Meridian	225	0	0	165	0	0	0	60	0	
183	International Paper Co.	Rose Point	715	0	715	0	0	0	0	0	0	
184	International Paper Co.	Wichita	1,000	0	1,000	0	0	0	0	0	0	
185	International Paper Co.	Wichita	1,200	0	1,200	0	0	0	0	0	1,000	
186	Manitowish Corp.	Laurel	1,000	0	0	0	0	0	0	0	0	
187	St. Regis Paper Co.	Natchitoches	1,620	0	1,620	0	0	0	0	0	0	
188	United States Oxygen Co.	Greenville	240	0	0	0	0	0	0	240	0	
	Total	7 plant(s)	6,000	0	4,535	165	0	0	0	300	1,000	
North Carolina:												
189	Albion Corp.	Swains River	100	0	0	0	0	0	0	100	0	
190	Albemarle Paper Co.	Swains Rapids	830	0	830	0	0	0	0	0	0	
191	Champion International	Canton	1,400	0	1,400	0	0	0	0	4,225	0	
192	Stevens Products Co.	Marion	225	0	0	0	0	0	0	0	0	
193	Federal Paper Board Co., Inc.	Blacksburg	1,100	0	1,100	0	0	0	0	4,120	0	
194	Georgia-Pacific Corp.	Cumby	120	0	0	0	0	0	0	0	0	
195	Weyerhaeuser Co.	Bytown	270	0	0	0	0	0	270	0	0	
196	Weyerhaeuser Co.	New Bern	640	0	640	0	0	0	0	0	0	
197	Weyerhaeuser Co.	Plymouth	1,350	0	1,350	0	0	0	250	0	0	
	Total	9 plant(s)	6,285	0	5,370	0	0	0	520	445	0	
Oklahoma:												
198	Georgia-Pacific Corp.	Fryer	50	0	0	0	0	0	0	50	0	
199	Weyerhaeuser Co.	Broken Bow	450	0	0	0	0	0	0	450	0	
200	Weyerhaeuser Co.	Wallant	1,800	0	1,300	0	0	0	500	0	0	
	Total	3 plant(s)	2,300	0	1,300	0	0	0	500	500	0	
South Carolina:												
201	Boonville Carolina Corp.	Catawba	1,090	0	940	150	0	0	0	0	0	
202	Catawba Newsprint Co.	Catawba	500	0	0	500	0	0	0	0	0	
203	Calover Corp.	Marion	360	0	0	0	0	0	0	3,360	0	
204	Champion International	Catawba	300	0	0	0	0	0	0	4,300	0	
205	International Paper Co.	Georgetown	2,310	0	1,830	0	0	0	480	0	0	
206	Sonoco Products Co.	Hartsville	400	0	0	0	0	0	400	0	0	
207	South Carolina Industries, Inc.	Florence	660	0	660	0	0	0	0	0	0	
208	Westvaco Corp.	Charleston	2,000	0	2,000	0	0	0	0	0	0	
	Total	8 plant(s)	7,620	0	5,430	650	0	0	880	660	0	

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Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours							Semi-chemical	Defibrated:Exploded
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda				
Tennessee:												
209	Bentley Southern Paper Corp.	Calhoun	1,200	0	500	500	200	0	0	0	0	0
210	Calotas Corp.	Memphis	45	0	0	45	0	0	0	0	0	0
211	Calotas Corp.	Paris	300	0	0	0	0	0	0	300	0	0
212	Inland Container Corp.	New Johnsonville	395	0	0	0	0	0	0	395	0	0
213	Mead Corp.	Marietta	195	0	0	0	0	0	0	195	0	0
214	Mead Corp.	Kingsport	250	0	0	0	0	250	0	0	0	0
215	Southern Extract Co.	Knorrville	135	0	0	0	0	0	135	0	0	0
216	Tennessee River Pulp & Paper Co.	Counce	700	0	4,700	0	0	0	0	0	0	0
	Total	8 plant(s)	3,220	0	1,200	545	200	250	725	300	0	0
Texas:												
217	Calotas Corp.	Houston	25	0	0	0	0	0	0	25	0	0
218	Champion International	Pasadena	830	0	750	80	0	0	0	0	0	0
219	Eastex Inc.	Evidale	1,250	0	1,250	0	0	0	0	0	0	0
220	GSF Corp.	Dallas	40	0	0	0	0	0	0	40	0	0
221	International Paper Co.	Texasians	610	0	610	0	0	0	0	0	0	0
222	Owens-Illinois Inc.	Orange	1,000	0	1,000	0	0	0	0	0	0	0
223	Southland Paper Mills, Inc.	Houston	950	0	650	300	0	0	0	0	0	0
224	Southland Paper Mills, Inc.	Lufkin	1,200	0	400	800	0	0	0	0	0	0
225	Temple Industries Inc.	Diboll	300	0	0	0	0	0	0	300	0	0
	Total	9 plant(s)	6,205	0	4,660	1,180	0	0	0	365	0	0
Virginia:												
226	Chenapah Corp. of Virginia	West Point	1,150	0	1,150	0	0	0	0	0	0	0
227	Continental Can Co., Inc.	Empire	1,063	0	896	0	0	0	167	5,999	0	0
228	Evans Products Co.	Doonell	0	0	0	0	0	0	0	0	0	0
229	Mead Corp.	Lynchburg	190	0	0	0	0	0	190	0	0	0
230	Owens-Illinois Inc.	Big Island	550	0	0	0	0	0	550	0	0	0
231	Southern Johns-Manville Prods.	Jarratt	225	0	0	225	0	0	0	0	0	0
232	Union Camp Corp.	Franklin	1,430	0	1,430	0	0	0	0	0	0	0
233	United States Gypsum Co.	Danville	330	0	0	0	0	0	0	330	0	0
234	Virginia Fibre Corp.	Riverdale	600	0	0	0	0	0	0	0	0	0
235	Westvaco Corp.	Covington	1,353	0	1,048	0	0	0	305	0	0	0
	Total	10 plant(s)	6,891	0	4,524	225	0	0	1,812	330	0	0
	Total, South	120 plant(s)	92,723	420	74,224	5,475	450	250	7,462	3,442	1,000	0

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Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours						Semi- chemical	Soda	Defibrated	Exploded	
				Sulfite	Sulfate	Ground- wood	Chemical mechanical	chemical						
West														
Alaska:														
236	Alaska Lumber & Pulp Co., Inc.	Sitka	600	600	0	0	0	0	0	0	0	0	0	
237	Ketchikan Pulp Co.	Ketchikan	640	640	0	0	0	0	0	0	0	0	0	
	Total	2 plant(s)	1,240	1,240	0	0	0	0	0	0	0	0	0	
Arizona:														
238	Southwest Forest Industries Inc.	Snowflake	820	0	600	220	0	0	0	0	0	0	0	
	Total	1 plant(s)	820	0	600	220	0	0	0	0	0	0	0	
California:														
239	Certain-Teed Products Corp.	Richmond	30	0	0	0	0	0	0	0	30	0	0	
240	Crown Simpson Pulp Co.	Arcata	550	0	550	0	0	0	0	0	0	0	0	
241	Diamond International Corp.	Red Bluff	75	0	0	0	0	4.75	0	0	0	0	0	
242	Fibreboard Corp.	Antioch	1,340	0	890	0	0	0	0	450	0	0	0	
243	Flinthote Co.	Vernon	35	0	0	0	0	0	0	0	0	35	0	
244	Johas-Murville Products Corp.	Pittsburg	110	0	0	0	0	0	0	0	4.35	0	0	
245	Louisiana-Pacific Corp.	Samoa	600	0	600	0	0	0	0	0	110	0	0	
246	Masonite Corp.	Ukiah	300	0	0	0	0	0	0	0	0	0	4,300	
247	Northwest Paper Div.	Pomona	25	0	0	0	0	0	0	0	0	0	25	
248	Simpson-Lee Paper Co.	Anderson	150	0	150	0	0	0	0	0	0	0	0	
	Total	10 plant(s)	3,215	0	2,190	0	0	75	0	450	175	0	325	
Idaho:														
249	Portlatch	Lewiston	850	0	850	0	0	0	0	0	0	0	0	
	Total	1 plant(s)	850	0	850	0	0	0	0	0	0	0	0	
Montana:														
250	Bosner Waldorf Corp.	Missoula	1,150	0	1,150	0	0	0	0	0	0	0	0	
	Total	1 plant(s)	1,150	0	1,150	0	0	0	0	0	0	0	0	

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Table 2.--Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours										Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Semi-chemical	Defibrated	Explored
Oregon:																					
251	American Can Co.	Malheur	300																		
252	Boise Cascade Corp.	Salem	275		275																
253	Boise Cascade Corp.	St. Helens	850																		
254	Champion International	Dee	100																100		
255	Coos Head Timber Co.	Coos Bay	90		290																
256	Crown Zellerbach Corp.	Clatskanie	790																		
257	Crown Zellerbach Corp.	Lebanon	105																		
258	Crown Zellerbach Corp.	West Linn	250																		
259	Evans Products Co.	Corvallis	100																100		
260	Forest Fiber Products Co.	Forest Grove	100																		
261	Georgia-Pacific Corp.	Coos Bay	100																		
262	Georgia-Pacific Corp.	Toledo	1,325																		
263	International Paper Co.	Gardiner	600																250		
264	Kaiser Gypsum Co., Inc.	St. Helens	180																		
265	Nanusha Corp.	North Bend	175																180		
266	Publishers Paper Co.	Medburg	520																		
267	Publishers Paper Co.	Oregon City	650																		
268	United States Gypsum Co.	Pilot Rock	130																130		
269	Western Kraft Corp.	Albany	700																		
270	Weyerhaeuser Co.	Klamath Falls	150																200		
271	Weyerhaeuser Co.	Springfield	1,150																		
	Total	21 plant(s)	8,640																625	660	
Washington:																					
272	Boise Cascade Corp.	Stallacom	300																		
273	Boise Cascade Corp.	Wallula	700																240		
274	Crown Zellerbach Corp.	Port Angeles	297																		
275	Crown Zellerbach Corp.	Camas	1,200																		
276	Crown Zellerbach Corp.	Port Townsend	420																		
277	Fibreboard Corp.	Port Angeles	105																		
278	Georgia-Pacific Corp.	Bellingham	580																		
279	Inland Empire Paper Co.	Millwood	141																		
280	ITT Rayonier Inc.	Port Angeles	475																		
281	ITT Rayonier Inc.	Moquian	475																		

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Table 2.-Location and 24-hour daily capacity of woodpulp mills in the United States, 1974--cont.

Plant No.	Plant name	Plant location	Total	Mill capacity in tons/24 hours						
				Sulfite	Sulfate	Ground-wood	Chemical-mechanical	Soda	Semi-defibrated	Exploded
232	Washington--cont.									
233	Kayes Fibers Co.	Manitoba	35	0	0	35	0	0	0	0
234	Longview Fibers Co.	Longview	2,100	0	1,800	0	0	300	0	0
235	Publisher's Forest Products Co.	Anacortes	60	0	0	0	0	0	60	0
236	Scott Paper Co.	Anacortes	135	135	0	0	0	0	0	0
237	Scott Paper Co.	Everett	835	835	0	0	0	0	0	0
238	Slipman Lee Paper Co.	Everett	140	0	2,140	0	0	0	0	0
239	Slipman Timber Co.	Shelton	120	0	0	120	0	0	0	0
240	St. Regis Paper Co.	Tecoma	1,090	0	1,090	0	0	0	0	0
241	Weyerhaeuser Co.	Companio	400	400	0	0	0	0	0	0
242	Weyerhaeuser Co.	Everett	640	300	340	0	0	0	0	0
243	Weyerhaeuser Co.	Longview	1,325	400	850	0	0	275	0	0
244	Total	21 plant(s)	11,593	4,063	5,700	876	80	815	60	0
245	Total, West	57 plant(s)	27,508	6,172	15,485	2,586	155	0	1,890	895
246	Total, United States	292 plant(s)	148,762	10,489	98,942	14,751	1,095	385	14,117	7,658

<sup>1</sup> Includes chemi-groundwood.

<sup>2</sup> Mill idle

<sup>3</sup> Mill under construction

<sup>4</sup> Capacity estimated

<sup>5</sup> No estimate of capacity available

Source: Lohwood's Directory of the Paper and Allied Trades - 1974

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Table 3.--Number, daily and average daily capacity of woodpulp mills in the United States, by type of mill

Year	Total	Sulfite	Sulfate	Groundwood	Soda	Semichemical	Dehydrated	Chemical	Chemical-mechanical
Mills	Capacity	Mills	Capacity	Mills	Capacity	Mills	Capacity	Mills	Capacity
: Daily	: Aver-	: Daily	: Aver-	: Daily	: Aver-	: Daily	: Aver-	: Daily	: Aver-
: : age	: : age	: : age	: : age	: : age	: : age	: : age	: : age	: : age	: : age
No.	Tons	No.	Tons	No.	Tons	No.	Tons	No.	Tons
1920:	323 : 15,340:	47 : 96 :	23 : 765 :	33 : 175 :	7,430:	42 : 29 :	1,655:	57 : --- :	--- : --- :
1930:	308 : 21,185:	69 : 89 :	39 : 3,660:	94 : 136 :	8,190:	60 : 31 :	1,925:	62 : 23 :	2 : 2 :
1940:	259 : 29,840:	115 : 80 :	8,675:	108 : 43 :	11,240:	261 : 100 :	7,425:	74 : 26 :	1,815:
1950:	258 : 43,660:	169 : 67 :	9,115:	136 : 59 :	21,285:	361 : 91 :	8,640:	95 : 19 :	1,685:
1960:	338 : 82,601:	244 : 64 :	11,699:	183 : 84 :	45,720:	544 : 92 :	12,351:	134 : 11 :	1,425:
1965:	345 : 104,595:	303 : 61 :	11,550:	199 : 99 :	63,595:	642 : 80 :	13,310:	166 : 7 :	1,125:
1970:	358 : 137,047:	383 : 49 :	10,903:	223 : 120 :	90,232:	752 : 81 :	16,142:	199 : 4 :	570:
1974:	349 : 148,762:	426 : 41 :	10,489:	256 : 120 :	98,942:	825 : 70 :	14,751:	211 : 2 :	385:

1 Includes one mill with type and capacity unknown.

2 Included in semichemical.

Source: Woodpulp Mills in the United States, USDA Forest Service, 1961.  
Lockwood's Directory of the Paper and Allied Trades, 1960, 1965, 1970, and 1974.  
Woodpulp Mills in the United States and Canada, USDA Forest Service, 1965.

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Table 4.--Number, daily and average capacity of woodpulp mills in the United States, by region

Year	United States			Northeast			North Central			South			West		
	Mills	Capacity		Mills	Capacity		Mills	Capacity		Mills	Capacity		Mills	Capacity	
	: Daily : Average :			: Daily : Average :			: Daily : Average :			: Daily : Average :			: Daily : Average :		
	No. : Tons :			No. : Tons :			No. : Tons :			No. : Tons :			No. : Tons :		
1920	323	15,340	47	197	9,890	50	86	3,425	40	24	995	41	16	1,030	64
1930	308	21,185	69	152	5,720	64	76	4,650	61	40	2,995	75	40	3,820	96
1940	259	29,840	115	110	8,585	78	61	4,655	76	49	11,115	227	39	5,485	141
1950	258	43,660	169	95	8,635	91	60	5,610	94	63	21,250	337	40	8,165	204
1960	338	82,601	244	95	12,206	128	78	9,116	117	102	46,556	456	63	14,723	234
1965	345	104,595	303	82	12,520	153	81	11,605	143	109	59,440	545	73	21,030	288
1970	358	137,047	383	73	14,956	205	74	12,745	172	134	83,396	622	77	25,950	337
1974	349	148,762	426	62	15,434	249	70	13,097	187	144	92,723	644	73	27,508	377

Source: Woodpulp Mills in the United States, USDA Forest Service, 1961.  
 Lockwood's Directory of the Paper and Allied Trades, 1960, 1965, 1970, and 1974.  
 Woodpulp Mills in the United States and Canada, USDA Forest Service, 1965.

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 Madison, Wisconsin 53705





Table 6.--Annual production of woodpulp and annual consumption of pulpwood in the United States, by type of mill

Year	Dissolving and special				Sulfite				Sulfate				Groundwood			
	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Pulpwood : consumption :
	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :	1,000 : cords :
1920	3,822	6,114	1.60	1	1,586	3,204	2.02	189	397	2.10	1,584	2	---	---	---	---
1930	4,630	7,196	1.55	1	1,567	3,137	2.00	950	1,691	1.78	1,560	2	---	---	---	---
1940	8,961	13,743	1.53	1	2,608	4,966	1.90	3,748	5,975	1.59	1,633	2	---	---	---	---
1950	14,849	23,627	1.59	1	2,485	5,716	2.30	7,865	13,288	1.70	2,216	2	---	---	---	---
1960	25,316	40,165	1.59	1,138	2,233	1.96	2,578	5,896	2.29	14,590	24,440	1.68	3,292	3,109	0.94	---
1965	33,296	52,236	1.57	1,486	3,313	2.23	2,789	5,472	1.96	20,514	35,194	1.72	3,920	3,644	.93	---
1970	42,216	67,524	1.60	1,716	3,673	2.14	2,308	4,959	2.15	28,671	49,368	1.72	4,393	4,286	.98	---
1974	46,417	74,459	1.54	1,723	3,953	2.30	2,209	4,722	2.14	33,010	55,301	1.68	4,711	4,413	.94	---

<sup>1</sup>Included in sulfite/sulfate.

<sup>2</sup>Included in "other".

Table 6.--Annual production of woodpulp and annual consumption of pulpwood in the United States, by type of mill--continued

Year	Soda			Semichemical			Defibrated/emploded			Screenings			Other <sup>3</sup>		
	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :	Woodpulp : production :	Pulpwood : consumption :	Woodpulp : production :
	Total : Per ton :	of pulp :	produced :	Total : Per ton :	of pulp :	produced :	Total : Per ton :	of pulp :	produced :	Total : Per ton :	of pulp :	produced :	Total : Per ton :	of pulp :	produced :
	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :	1,000 : 1,000 :
	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :	tons : cords :
1930 :	463 : 923 :	1.99 :	---	---	---	---	---	---	---	---	---	---	---	---	---
1935 :	474 : 849 :	1.79 :	79 :	2 :	---	---	---	---	---	---	---	---	---	---	---
1940 :	532 : 979 :	1.84 :	165 :	2 :	---	211 :	2 :	---	64 :	2 :	---	---	---	---	---
1950 :	522 : 1,018 :	1.95 :	620 :	2 :	---	997 :	2 :	---	144 :	2 :	---	---	---	---	---
1960 :	420 : --- :	---	1,991 :	2,073 :	1.04 :	1,205 :	1,165 :	0.97 :	102 :	---	---	---	---	---	---
1965 :	229 : --- :	---	2,885 :	3,053 :	1.06 :	1,303 :	1,560 :	1.20 :	171 :	---	---	---	---	---	---
1970 :	195 : --- :	---	3,339 :	3,437 :	1.03 :	1,307 :	1,802 :	1.38 :	286 :	---	---	---	---	---	---
1974 :	200 : --- :	---	3,836 :	3,914 :	1.02 :	2,598 :	2,156 :	.83 :	131 :	---	---	---	---	---	---

<sup>3</sup>Excludes groundwood, semichemical, defibrated/emploded, screenings, and unspecified pulpwood types.

Source: Woodpulp Mills in the United States, USDA Forest Service, 1961.

Current Industrial Reports, Pulp, Paper & Board, Series M26A, U.S. Department of Commerce, 1963, 1965, 1970, 1974.

Wood Pulp and Fiber Statistics, American Paper Institute, Inc., 1975.

Wood Pulp Statistics, American Paper Institute, Inc., 1961.



Table 7.--Annual pulpwood consumption in the  
United States

Year	Total pulpwood consumption	Roundwood	Softwood	Hardwood	Residues
	Million cords	Pct	Pct	Pct	Pct
1920	6.1	85	11	4	
1930	7.2	79	13	8	
1940	13.7	88	11	1	
1950	23.6	80	14	6	
1960	40.2	66	17	17	
1965	52.2	58	17	25	
1970	67.5	54	17	29	
1974	74.5	51	18	31	

Source: Woodpulp Mills in the United States, USDA Forest Service, 1961.  
Current Industrial Reports, Pulp Paper & Board, Series M26A,  
U.S. Department of Commerce, 1963, 1965, 1970, and 1974.  
Woodpulp and Fiber Statistics, American Paper Institute, 1975.

Table 8.--Production of pulpwood in the United States as a percent of total production of roundwood timber products

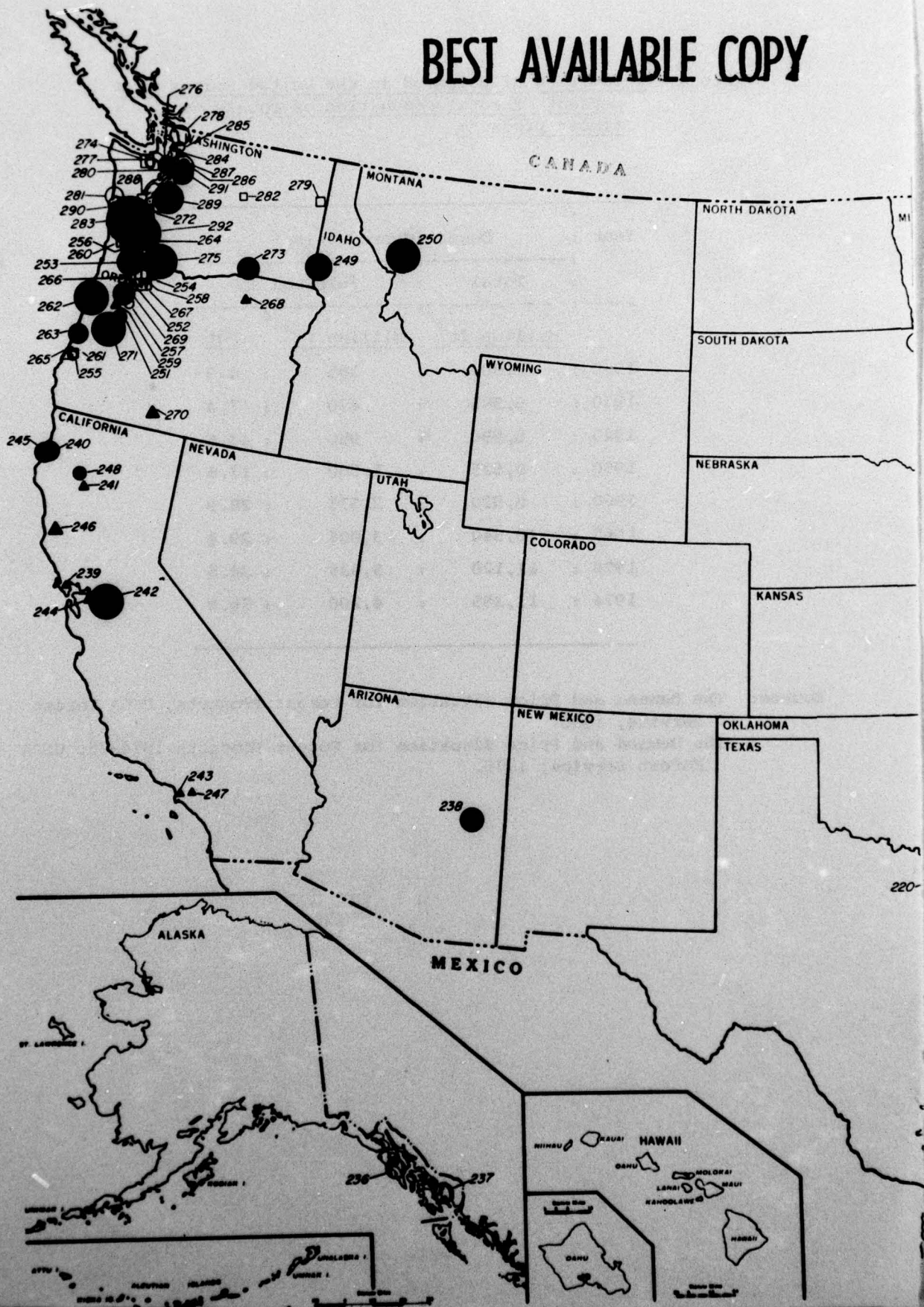
Year	Domestic production		
	Total	Pulpwood	
	Million ft <sup>3</sup>	Million ft <sup>3</sup>	Pct
1920	7,800	385	4.9
1930	6,385	470	7.4
1940	6,990	950	13.6
1950	8,525	1,500	17.6
1960	8,920	2,575	28.9
1965	10,540	3,095	29.4
1970	11,120	3,835	34.5
1974	11,395	4,200	36.9

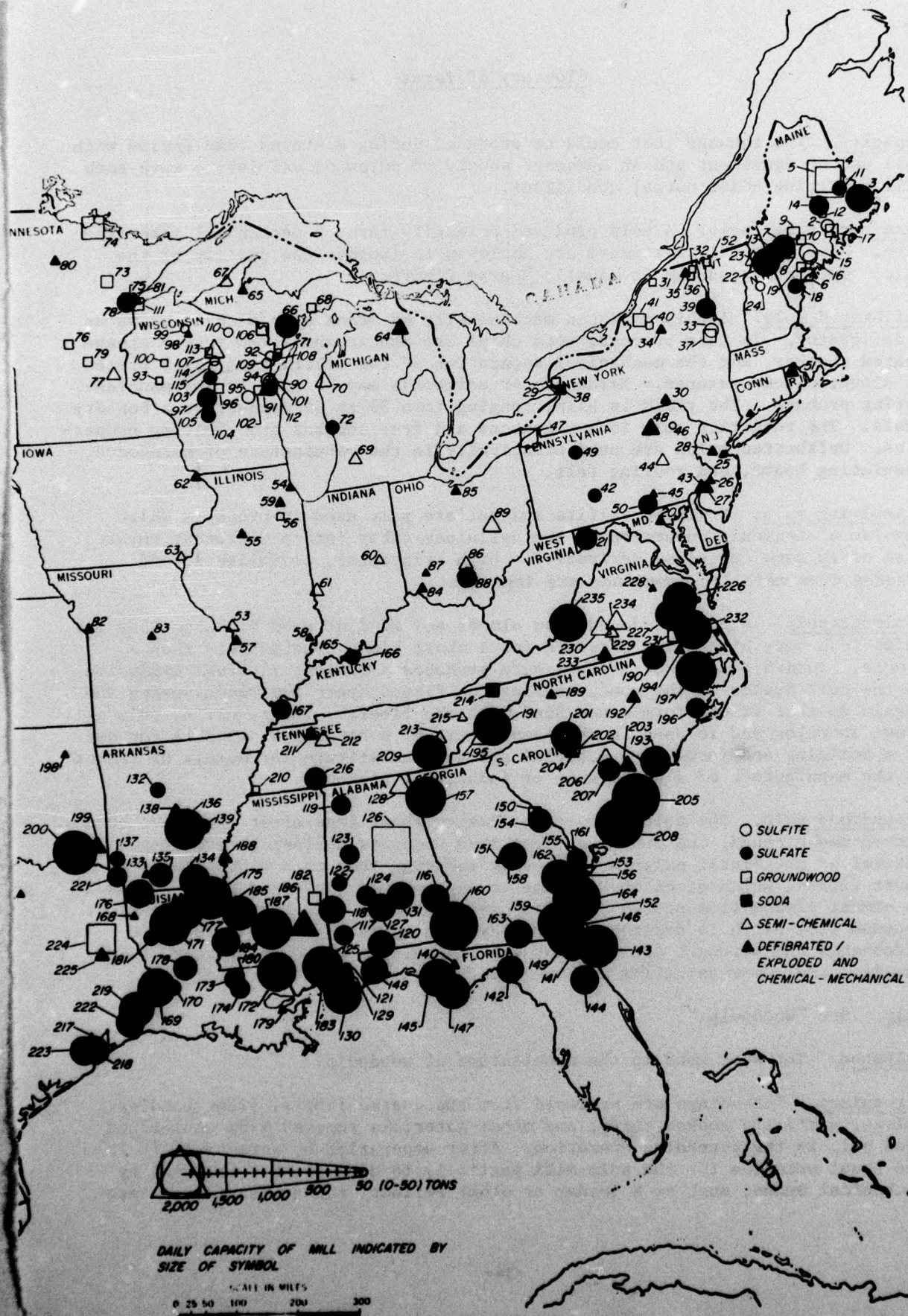
Source: The Demand and Price Situation for Forest Products, USDA Forest Service, 1958.

The Demand and Price Situation for Forest Products 1974-75, USDA Forest Service, 1975.



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### Glossary of Terms

Capacity. The tonnage that could be produced during a stated time period with full use of equipment and an adequate supply of pulpwood and labor, with each mill operating under normal conditions.

Chemimechanical pulp. A pulp produced primarily through mechanical fiberization. Mild chemical treatments are employed to improve the quality of the pulp. The pulp produced is usually coarse fibered.

Defibrated pulp. A pulp produced mechanically by means of a machine known as a defibrator. In this process, wood chips are continuously fed into a steam-heated chamber, and the mechanical separation of the fibers then takes place at elevated temperatures. Hardwoods or softwoods may be used in the manufacturing process. The yield is high, ranging from 90 to 95 percent on a bonedry basis. The resulting pulp is homogeneous and free and has good felting properties. Defibrated pulps are used principally in the manufacture of hardboard, insulating board, and roofing felt.

Dissolving pulp. Modified sulfite and sulfate pulp used in products which involve a chemical conversion of the cellulose fiber into a different physical form or to some cellulase derivative. High brightness, cleanliness, and freedom from metallic compounds are important.

Exploded pulp. A pulp produced from almost any kind of wood by subjecting the chips to a very high steam pressure for a short time, usually less than a minute. Sudden release of the pressure produces a violent internal explosion in the cell spaces of the wood, tearing the fibers apart and reactivating the lignin so that it can form a new bond with the fibers. The resulting pulp is brown in color and is used in the manufacture of a hardboard suitable for use as a building and insulating material and as a substitute for metals or lumber in the manufacture of a wide range of industrial products.

Groundwood pulp. The pulp produced by taking short logs after they have been barked and cleaned, and pressing these logs sideways against a revolving natural or artificial pulpstone, thereby reducing them to a fibrous mass of short fibers, which discolors in time on exposure to light and air. The wood is almost always from softwoods, although in certain pulp hardwoods are used. Freedom from pitch is desirable. Groundwood pulp is used in papers where permanence and strength are of minor importance, but where absorbency, bulk, opacity, and compressibility are the chief characteristics desired.

Pulp. See "Woodpulp."

Pulpwood. The wood used in the manufacture of woodpulp.

Screenings. Screenings are produced from the coarse fibers, fiber bundles, shives, partially cooked chips, and other materials removed from unbleached wood pulp in the screening operation. After separation by screening, it is the usual practice for the pulp mill partially to defiber this material by mechanical means, such as a jordan or other refiner, before running it into

laps or sheets. Screenings are used principally in the manufacture of coarse grades of paper and paperboard, such as mill wrapper, and as a substitute for chipboard, corrugating material, and insulation board. Screenings are produced in all the chemical pulping processes, but normally only the screenings from the sulfate, and acid and neutral sulfite processes are used commercially. Groundwood screenings are occasionally refined and admixed with virgin stock and may be used in the coarsest grades of board.

Semichemical pulp. Semichemical pulp is so called because only a part of the ligneous part of the wood is removed during cooking, and consequently, high yields are obtained from this process. The term "semichemical" indicates a relatively mild degree of cooking, such as a quick-cook sulfite or sulfate cook, and is not specific to any of the chemical pulping processes. After cooking, the softened chips are mechanically disintegrated by a suitable refiner. Although some semichemical pulp is now being bleached by the peroxide method for use in the manufacture of printing papers, this type of pulp is chiefly used in the unbleached state, and is characterized by a relatively low color (dependent upon the wood used) and yields a sheet of paper or board that has a dense formation and a high degree of stiffness and rigidity.

Soda pulp. The term used for the pulp in which the active cooking agent is caustic soda, the digestion taking place at fairly high temperatures. Soda pulp is made principally from broadleaf woods, such as aspen, birch, maple, gum, and tulip poplar. When bleached, it reaches a fairly white color. In general, owing to the natural shortness of the fiber (1 to 1.5 mm), it possesses very little physical strength but imparts the desirable properties of smoothness, bulk, opacity, and uniform formation for printing requirements. Some soda pulp is also made from coniferous woods. This pulp is soft in texture and is stronger than that reproduced from broadleaf woods.

Sulfate pulp. A term commonly used for all grades of pulp cooked by the process in which the makeup chemical is essentially sodium sulfate. Originally, sulfate pulps were used for the most part in the manufacture of various grades of paper and paperboard where physical strength was of primary importance. However, increasing amounts of sulfate pulps are being used for absorbent tissues, wadding, and for chemical conversion grades. Although the stronger grades are made from softwoods, very large quantities of hardwood kraft pulps are produced.

Sulfite pulp. Although some bleached sulfite is made from hardwoods, it is usually manufactured from coniferous woods of low resin content, such as spruce, balsam, fir, and hemlock, by dissolution of the ligneous material (lignin) with calcium bisulphite cooking acid. Dolomite limes, containing a fair percentage of magnesium along with the calcium, are sometimes used when economical. Sulfite pulp is used either bleached or unbleached in nearly all classes of papers, and bleached sulfite pulp is used in the manufacture of rayon and cellulose esters and ethers.

Wood pulp. Wood pulp is pulp manufactured either by mechanical or chemical means or both from softwood or hardwood trees. It is used as part or all of the fiber composition in practically every type of paper and constitutes approximately 90 percent of the virgin pulp fiber used by the world's paper and board industry. In addition to its use by the paper and board industry,



bleached and purified chemical wood pulp is widely employed for rayon and other products involving a chemical conversion of the cellulose fiber.

Woodpulp mill. The manufacturing facilities used to produce a specific type of woodpulp, such as sulfite or groundwood.

Woodpulp plant. The manufacturing facilities used to produce woodpulp at a single location. Two or more mills operating as a unit at a single location would be considered one plant.

Source: The Chemistry of Wood. B. L. Browning, 1975.

The Dictionary of Paper. American Pulp and Paper Association, 1965.

Hair, Dwight. Use of regression equations for projecting trends in demand for paper. USDA, Forest Service, 1967.

Woodpulp and Fiber Statistics. American Paper Institute, 1975.

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**U.S. Forest Products Laboratory.**

Woodpulp mills in the United States in 1974, by David B. McKeever. Madison, Wis., FPL, 1977. 36 p. (USDA For. Serv. Res. Rep. FPL-1).

*This report*

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**KEYWORDS:** Pulp mills, pulpwood consumption, pulpwood production, and sulfate, sulfite, groundwood, soda, chemimechanical, defibrated, dissolving, exploded, and semichemical pulping.

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